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Mr. Townsend, of the Albatross, at Socorro Island, about 200 miles off Cape St. Lucas, Lower California.

18. *P. Palmeri* Watson. Guaymas, Mexico (Palmer); Lower California at Commondu and Purisima (Brandegee). Watson, Proc. Amer. Acad. 24. 37. Brandegee, Proc. Cal. Acad., 2 ser., 2.177.

19. *P. Parryi* Gray. Collected by Parry, Havard, and recently by Pringle.

20. *P. Vaseyi* Coulter, ined. A new species from Texas (Nealley). Nearest P. Parryi, but of very different habit and foliage.

21. *P. aglossa* Gray. Only known from the canons of the Rio Grande (Parry).

22. *P. Jaliscana* Gray. Collected by Palmer in 1886, in the State of Jalisco, Mexico. Proc. Am. Acad. 22. 431.

Explanation of Plate XIII.—All figures × 20. 1. P. Fitchii (Palmer's San Quentin coll. of 1889). 2. P. Brandegeana (Palmer's Lagoon Head coll. of 1889). 3. P. Californica (Brandegee's Magdalena Bay coll. of 1889). 4. P. cuneata (Brandegee's Lower California coll. of 1890). 5. P. microglossa (Palmer's 1093 from Mexico). 6. P. Emoryi, var. (Orcutt's Colorado Desert coll. of 1889). 7. P. Greenei (Palmer's San Benito Isl. coll. of 1889). 8. P. Grayi (Palmer's Guadalupe Isl. coll. of 1889). 9. P. Socorrosensis (Townsend's Socorro Isl. coll. of 1889).

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BRIEFER ARTICLES.

An international congress of botanists.—The idea occurred to the writer some time ago that the action of a number of societies, representing widely different interests, preparatory to taking advantage of the influx of visitors at the World's Fair three years hence, in order to secure representative gatherings of international character, might be imitated by the botanists to their great advantage and the furtherance of science. After some deliberation the matter was communicated by letter to a number of botanists, nearly a score in fact, with a request for their opinion. The answers have been almost uniformly favorable to the project, and in the majority of cases even enthusiastically so.

With one possible exception I have received no intimation of doubt about the great value and desirability of such a meeting. The buts and ifs are chiefly directed to the possibility of securing the attendance of foreign botanists whose presence is necessary to give sufficient weight to the deliberations of the congress to make the conclusions reached of universal acceptance. If this difficulty can be successfully met the minor questions of time and place of meeting, topics to be discussed, etc., will be easily settled.

Did Europeans think as little of crossing the Atlantic as Americans do, the matter of attendance would lose its threatening aspect. The World's Fair can not be expected to solve the problem, although it can be made to contribute something to that end. Some reliance can doubtless be placed upon the reputation of the country for its wonderful natural, social and political features. Something may be expected from offering an attractive excursion. And much can undoubtedly be done by personal invitation from American botanists to their foreign acquaintances and correspondents. In some cases there will probably be opportunity of giving these in person, as there are three intervening seasons for vacation travels, during which a number of botanists will doubtless cross the Atlantic. A personal presentation of the matter along with the invitation will have much more weight than a simple general invitation.

The time of the meeting must necessarily be in August or September, as these are the only months that all university teachers are disengaged.

The place of the meeting might conform to that of the A. A. A. S., although there are good reasons for having it at a different time and place. At any event it would probably be best to hold it at some other place than Chicago, as also suggested by Professors Penhallow and Scribner. My own preference would be for Philadelphia or Washington. If it were not for the heat, Washington would certainly be in many respects a most attractive place of meeting.

Professor Farlow observes in his letter that " when a foreign botanist makes up his mind to come to the United States he counts upon seeing California, the Yellowstone and the western country generally; and to see all these regions requires a great deal of time and money. It seems to me that foreigners would be disappointed if they only saw the country between New York and Chicago, and few could afford to pay their expenses to distant points." Next to the problem of securing the desired attendance, I think the question of excursions and entertainment the most difficult. It is evident that not much can be done without the use of a considerable sum of money. Excursion rates could doubtless be obtained, which would enable most American botanists, who so chose, to be of the party; but to secure money enough to pay the expenses, or even the railway fare of foreign visitors across the continent and back would require much exertion. Possibly some means may be found of meeting these expenses aside from direct contributions of money.

As to the extent of the excursion, both time and money will necessitate moderation in laying the plans. It seems, however, that the chief trip should extend at least as far west as the Yellowstone Park. The southern part of the country can be left out with good grace, considering the fact that the time will be the hottest part of the year in all probability. But these matters can be discussed later.

If a full expression of opinion can be had through the journals, or otherwise, the Association meeting at Indianapolis will give opportunity to arrange plans and effect an organization.—J. C. A.

Relation of light to epinasty in Solanum tuberosum.—In his article on Epinasty and Hyponasty, in the *Annals of Botany* (August, 1889), Vines catalogues certain experiments which indicate that epinasty is stimulated in the case of Helianthus annuus rather by absence of light than by its presence—thus offering a criticism upon the well-known photo-epinastic theory of Detmer. A specimen of Solanum tuberosum growing in the plant-house of the University of Minnesota has seemed to present some interesting evidence in the same line. A plant of the Solanum, about fifteen centimeters in height, was exposed to diminished and one-sided illumination for a period of twenty-four hours and pronounced epinastic curvatures resulted. When in the plant-house the shoot and leaves of this specimen were growing under the influence of strong direct sunlight augmented by reflection from the snow and by the southerly exposure. When removed from the house the plant was placed in a lecture-room lighted by three large windows facing the south. The removal took place about three o'clock in the afternoon, and by four o'clock the following day the older leaves were turned downward so that the tips touched the stem, and at the same time transverse epinastic curvatures had taken place, rolling the leaves so that in two cases the margins touched each other. The younger leaves were in four cases thrown into helicoid curves, reminding one of the circinate vernation in ferns, and in three cases turned down against the stem in the same fashion as the mature leaves. Contemporaneously the shoot had taken a slanting position towards the window—from which the plant was distant a little over seven feet—and finally made an angle of thirty-five degrees with the perpendicular. This strongly epinastic and heliotropic position was maintained for four days, and at the end of this time the plant was returned to the well-illuminated green-house where, after twenty-four hours, the leaves began to resume their normal position, although the axis remained in a heliotropically curved position. After five days had passed the most of the leaves were in the ordinary position, and only one of the oldest preserved any marked traces of its stimulated position. The temperature of the green-house was constant at about 80° F., while that of the lecture-room was variable, running from about 60° F. in the early morning to 74° F. in the afternoon.

The behavior of this Solanum would indicate that even a slight diminution in illumination permits epinastic curvatures to manifest themselves very strongly, but further experiments should be made before it would be possible to refer the position described in this brief note entirely to the diminished illumination.—CONWAY MACMILLAN, *University of Minnesota.*